



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,902	05/26/2006	Midorikawa Yukinori	12400-079	1277
757 7590 07/14/2009 BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60610				
EXAMINER				
HAUGLAND, SCOTT J				
ART UNIT		PAPER NUMBER		
3654				
MAIL DATE		DELIVERY MODE		
07/14/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/580,902

Applicant(s)

YUKINORI ET AL.

Examiner

SCOTT HAUGLAND

Art Unit

3654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/28/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2009 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings were received on 4/28/09. These drawings are objected to for the reasons set forth below.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the spiral spring recited in claim 2, line 3 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Amendment Format

The changes to claim 12 are not properly marked in accordance with 37 CFR 1.121(c). E.g., the deletion of "a rotation" from line 3 of the previous version of claim 12 is not indicated in the current version of the claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what torques are referred to in claim 1, lines 21-23 since the ordinary torque generating components (spring and motor) disclosed would produce varying torques during operation.

Claim 6 is inaccurate or unclear. The elastic force of the disclosed elastic member would vary depending on the amount that it is compressed and would be zero when uncompressed.

The language of claim 12, lines 15-19 appears to be inaccurate because a finite constant rotary speed or a decreasing rotary speed of the spindle would indicate winding or unwinding of the webbing and not a webbing stoppage state.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 15, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. Pat. Appl. Pub. No. 2002/0189880) in view of Yano et al (U.S. Pat. No. 6,499,554).

Tanaka et al discloses a retractor for a seat belt system for a vehicle comprising: a spindle 4 on which a webbing is wound, a frame 2 for pivotally holding the spindle, and a first torque generating system 14 including spiral spring 54 which generates torque to rotate the spindle in a winding direction in which the webbing is wound and connected to the spindle at all times so as to transmit the generated torque to the spindle, a second torque generating system (motor 10) which generates torque to rotate the spindle in the winding direction, and a torque transmitting mechanism system 5 which transmits the torque generated by the second torque generating system to the spindle. The torque transmitting mechanism system 5 does not transmit torque

generated second torque generating system to the spindle when the second torque generating system generates torque for rotating the spindle in the seatbelt unwinding direction (abstract, par. 68). The second torque generating system generates a torque in the unwinding direction after winding the belt to put the torque transmitting mechanism system into a state in which the second torque generating system does not transmit torque to the spindle to prevent interference with the normal operation of the spindle (Fig. 6). The first torque generating system (spring unit 14) produces a torque that may be so low as to be incapable of satisfactorily winding the seatbelt onto spindle 4 by itself (par. 40). The second torque generating system (motor 10) has a significantly higher torque generating capability to ensure that the seat belt is wound when necessary.

Assuming, arguendo, that Tanaka et al does not disclose that the retractor includes the spindle locking system in the related patent to Yano et al, Yano et al teaches providing a seatbelt retractor of the type in Tanaka et al with a spindle locking system means (6,8) for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a spindle locking

system means for preventing the webbing from drawing that stops rotation of the spindle rotating in a webbing drawing out direction when a rotational acceleration of the spindle is greater than a first predetermined value when the webbing is accelerated in the drawing out direction and stops rotation of the spindle rotating in the drawing out direction when a deceleration of the vehicle is greater than a second predetermined value as taught by Yano et al to restrain a wearer of the seat belt during a vehicle emergency.

With regard to claim 20, the rotary speed of the spindle would inherently increase with time as torque is applied by the drive motor 10.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Peter (U.S. Pat. No. 2003/0201359).

Tanaka et al does not disclose a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged between the second torque generating system and the spindle.

Peter teaches a torque transmission cushioning system for cushioning a torque transmission by an elastic member 28 arranged between a torque generating system 36 and a belt spindle 12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a torque transmission cushioning system for cushioning a torque transmission by an elastic member arranged

between the second torque generating system and the belt spindle as taught by Peter to simplify the spindle acceleration responsive locking mechanism.

With regard to claim 6, it would have been obvious to make the elastic force of the elastic member in the power transmission cushioning system larger than the force generated at the same point by the first torque generating system to prevent false triggering of the associated locking mechanism.

Claims 7-13, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 1 above, and further in view of Fujii et al (U.S. Pat. No. 6,427,935).

Tanaka et al does not disclose a webbing action detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state or a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

Fujii et al teaches providing a seat belt retractor with a webbing action detecting system (40, 50) for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state and a control system (Fig. 16) for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the retractor of Tanaka et al with a webbing action

detecting system for detecting whether the webbing is drawn out, the webbing is wound, or the webbing is in a stopping state and a control system for controlling the torque of the second torque generating system according to an action of the webbing detected by the webbing action detecting system as taught by Fujii et al to provide improved control of the retractor that supports different operating modes.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al and Fujii et al as applied to claim 13 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding.

Midorikawa et al teaches gradually reducing the torque of a seat belt winding mechanism during winding (col. 51, lines 16-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract seatbelt with gradually decreasing torque as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al in view of Yano et al as applied to claim 15 above, and further in view of Midorikawa et al (U.S. Pat. No. 6,485,057).

Tanaka et al does not disclose making the second torque generating system gradually reduce the torque with lapse of time during winding.

Midorikawa et al teaches gradually reducing the torque of a seat belt winding mechanism during winding (col. 51, lines 16-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to retract seatbelt with gradually decreasing torque as taught by Midorikawa et al to prevent discomfort to the wearer during belt tightening.

Response to Arguments

Applicants' arguments filed 4/28/09 have been fully considered but they are not persuasive.

Applicants argue that Tanaka does not disclose a retractor wherein torque generated by a first torque generating system is made to be lower than the torque generated by a second torque generating system when the torques generated by the first and second torque generating systems are each transmitted to the spindle and that Tanaka differs from claim 1 in that the torques of the first and second torque generating systems are independently transmitted to the spindle. However, the claims do not include the limitation that the torques of the first and second torque generating systems are independently transmitted to the spindle and it is not clear how such a limitation would distinguish over Tanaka since the motors (second torque generating systems) in Tanaka and in applicants' apparatus are connected by clutches to the belt winding spindles and the springs (first torque generating systems) (54 in Tanaka) are connected to the spindles at all times. The torque generated by the second torque generating system is lower than the *acting on the spindle during operation of the motor in the

winding direction in Tanaka is disclosed as being greater than the torque of the first torque generating system alone (e.g., see Fig. 6) when the motor is drivingly connected to the spindle. The motor in Tanaka is used repeatedly.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **SCOTT HAUGLAND** whose telephone number is (571)272-6945. The examiner can normally be reached on Mon. - Fri., 10:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Q. Nguyen can be reached on (571) 272-6952. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Q. Nguyen/
Supervisory Patent Examiner, Art Unit 3654

/SJH/
7/9/09